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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO.
09/993,501	11/27/2001	Norman G. Anderson	2316-149	1460

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EXAMINER	
LU, FRANK WEI MIN	
ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/993,501	ANDERSON ET AL.	
	Examiner	Art Unit	
	Frank W Lu	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) *7-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Applicant's response to the office action filed on February 14, 2003 has been entered. The claims pending in this application are claims 1-13 with claims 7-12 withdrawn from consideration as the result of the restriction requirement. Rejection and/or objection not reiterated from the previous office action are hereby withdrawn in view of the amendment filed on February 14, 2003.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. The examiner notes that applicant does not address this issue.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 2 is rejected as vague and indefinite because it is unclear what it intended. Since bacteria, one of microorganism, can grow in different environments even through bacteria may grow very slowly in some environment, the statement that microorganism in a biological sample is not grown is not true. The examiner suggests that applicant replaces the phrase "is not grown" with "is not cultured".

Response to Arguments

In page 4, last paragraph bridging to page 5, first paragraph of applicant's remarks, applicant argued that "the Office Action appears to be making a distinction between "grown" and "cultured". The term "cultured", however, may be broad enough to include "maintained". In one embodiment, the microorganism may not be replicated intentionally to a greater number of microorganisms. In another embodiment, the microorganism may replicate at a very low level inherently. In neither case, however, would increasing the number of individual microorganisms be strictly necessary to practice the claimed invention.".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection because according to dictionary, the word "grow" means increase in size by a natural process while the word "culture" means the growing of microorganisms in a nutrient medium. Therefore, the phrases "is not grown" and "is not cultured" have different meanings.

6. Claim 5 is rejected as vague and indefinite because it is unclear whether claim 5 follows step (b) of claim 1 or step (c) of claim 1. Since both step (c) of claim 1 and claim 5 produce fragments of nucleic acid, if claim 5 follows step (b) of claim 1, step (c) of claim 1 appears a duplication step of the digestion step of claim 5. If claim 5 follows step (c) of claim 1, claim 1 and claim 5 will not correspond each other. Please clarify.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, 6, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Sambrook *et al.*, (Molecular Cloning, A Laboratory Manual, Second Edition, pages 1.25-1.30, 1989).

Sambrook *et al.*, teach small-scale preparation of plasmid DNA. 1.5 ml of bacteria culture was harvested in a microfuge tube by centrifugation and then plasmid DNA was isolated by either alkali lysis method or lysis by boiling method. The isolated double strand plasmid DNA as recited in claim 3 was digested with restriction enzyme(s) as recited in claims 6 and 13, and the digested DNA fragments were analyzed by gel electrophoresis (see pages 1.25-1.30. Specifically see pages 1.25 and 1.28). Note that: (1) the microfuge tube was considered as centrifuge tube comprising an upper region, a middle region and a low region wherein an inner diameter of said upper region

was larger than an inner diameter of said middle region and wherein an inner diameter of said middle region was larger than an inner diameter of said low region as recited in claim 1 (for the size and shape of the microfuge tube, see Figures 1.2 and 1.3); and (2) after the gel electrophoresis, the number of digested fragments of plasmid was determined as recited in claim 1.

Therefore, Sambrook *et al.*, teach all limitations recited in claims 1, 3, 6, and 13.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sambrook *et al.*, (1989) as applied to claims 1, 3, 6, and 13 above, and further in view of Maniatis *et al.*, (Molecular Cloning, A Laboratory Manual, pages 161, 1982).

The teaching of Sambrook *et al.*, have been summarized previously, *supra.*

Sambrook *et al.*, do not disclose to stain the digested DNA fragments as recited in claim 4.

Maniatis *et al.*, teach to detect nucleic acids in gel by incorporating ethidium bromide into both gel and the running buffer or to run the gel in the absence of ethidium bromide and stain the DNA on the gel after electrophoresis is complete (see page 161).

Therefore, in the absence of an unexpected result, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have used ethidium bromide to stain nucleic acid fragments in the gel in view of the references of Sambrook *et al.*, and Maniatis *et al.*. One having ordinary skill in the art would have been motivated to detect the digested nucleic acid fragments in the gel by incorporating ethidium bromide into both gel and the running buffer or staining the DNA in the gel with ethidium bromide after electrophoresis was complete because visualizing DNA in a gel by the use of a fluorescent dye ethidium bromide was the most convenient, simplest, and common method in the laboratory. One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to stain the digested nucleic acid fragments in the gel.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sambrook *et al.*, (1989) as applied to claims 1, 3, 6, and 13 above, and further in view of Burgoyne (US Patent No.5,756,126, filed on June 7, 1995).

The teaching of Sambrook *et al.*, have been summarized previously, *supra.*

Sambrook *et al.*, do not disclose to amplify immobilized extracted nucleic acids or digest immobilized extracted nucleic acids with a restriction enzyme as recited in claim 5.

Burgoyne teach to amplify immobilized extracted nucleic acids or digest immobilized extracted nucleic acids with a restriction enzyme (see Examples 1-3 in columns 15-21).

Therefore, in the absence of an unexpected result, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have amplified immobilized extracted nucleic acids or have digested immobilized extracted nucleic acids with a restriction enzyme in view of the prior art of Sambrook *et al.*, and Burgoyne. One having ordinary skill in the art would have been motivated to amplify immobilized extracted nucleic acids or digest immobilized extracted nucleic acids in order to test whether nucleic acids in immobilized form, like nucleic acids in solution form, would be used for subsequent analysis such as amplification and digestion. One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to amplify immobilized extracted nucleic acids or digest immobilized extracted nucleic acids.

Response to Arguments

In page 6, first paragraph bridging to page 7, first paragraph of applicant's remarks, applicant argues that "[S]ambrook neither teaches, discloses, nor suggests a centrifuge tube

comprising an upper region, a middle region and a lower region, contrary to the assertion at paragraph 12 of the Office Action. The microfuge tube shown in Figs. 1.2 and 1.3, rather, has at most two regions, only one of which may be said to have any specific diameter, since the other one is conical.".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection because Sambrook *et al.*, teach a centrifuge tube comprising an upper region, a middle region and a lower region wherein an upper region, a middle region and a lower region of the centrifuge tube is shown in Figure 1.3 (see attached Figure 1.3 for the upper region, the middle region and the lower region).

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sambrook *et al.*, (1989) as applied to claims 1, 3, 6, and 13 above, and further in view of Olson *et al.*, (Am. J. Clin. Pathol., 96, 454-458, 1991).

The teaching of Sambrook *et al.*, have been summarized previously, *supra.*

Sambrook *et al.*, do not disclose to centrifuge uncultured bacteria in a biological sample as recited in claim 2.

Olson *et al.*, teach the slide centrifuge gram stain as a urine screening method wherein bacteria in a biological sample (ie, urine) is centrifuged without further culturing bacteria in the biological sample (see page 455, left column).

Therefore, in the absence of an unexpected result, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have centrifuged

bacteria in a biological sample (ie, urine) without further culturing bacteria in the biological sample using a centrifuge tube as recited in claim 1 in view of the prior art of Sambrook *et al.*, and Olson *et al.*. One having ordinary skill in the art would have been motivated to do so because Olson *et al.*, have shown that they successfully centrifuged bacteria in a biological sample (ie, urine) without further culturing bacteria in the biological sample and use of centrifugation method for urine screening (screening for one of biological samples) would enhance the detection of different microorganisms (ie., anaerobes, fastidious organisms, and yeast) in urine due to its excellent sensitivity, high predictive value of negative results, and low incidence of false-negative results (see Olson *et al.*, page 458, left column, last paragraph). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to centrifuged bacteria in a biological sample (ie, urine) without further culturing bacteria in the biological sample using a centrifuge tube as recited in claim 1.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. No claim is allowed.

15. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is either (703) 308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (703) 305-1270. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703) 308-1152.

Any inquiry of a general nature or relating to the status of this application should be directed to the patent Analyst of the Art Unit, Ms. Chantae Dessau, whose telephone number is (703) 605-1237.

Frank Lu
May 13, 2002

Ethan Whisenant, Ph.D.
Primary Examiner
Art Unit 1634

ever, for reasons that are unknown, the elimination of this step often results in DNA that is resistant to cleavage by restriction enzymes.

6. Precipitate the double-stranded DNA with 2 volumes of ethanol at room temperature. Mix by vortexing. Allow the mixture to stand for 2 minutes at room temperature.

7. Centrifuge at 12,000*g* for 5 minutes at 4°C in a microfuge.

8. Remove the supernatant by gentle aspiration. Stand the tube in an inverted position on a paper towel to allow all of the fluid to drain away. Remove any drops of fluid adhering to the walls of the tube.

   The supernatant can be conveniently removed with a disposable pipette tip attached to a vacuum line (Figure 1.3). Use a gentle vacuum and touch the tip to the surface

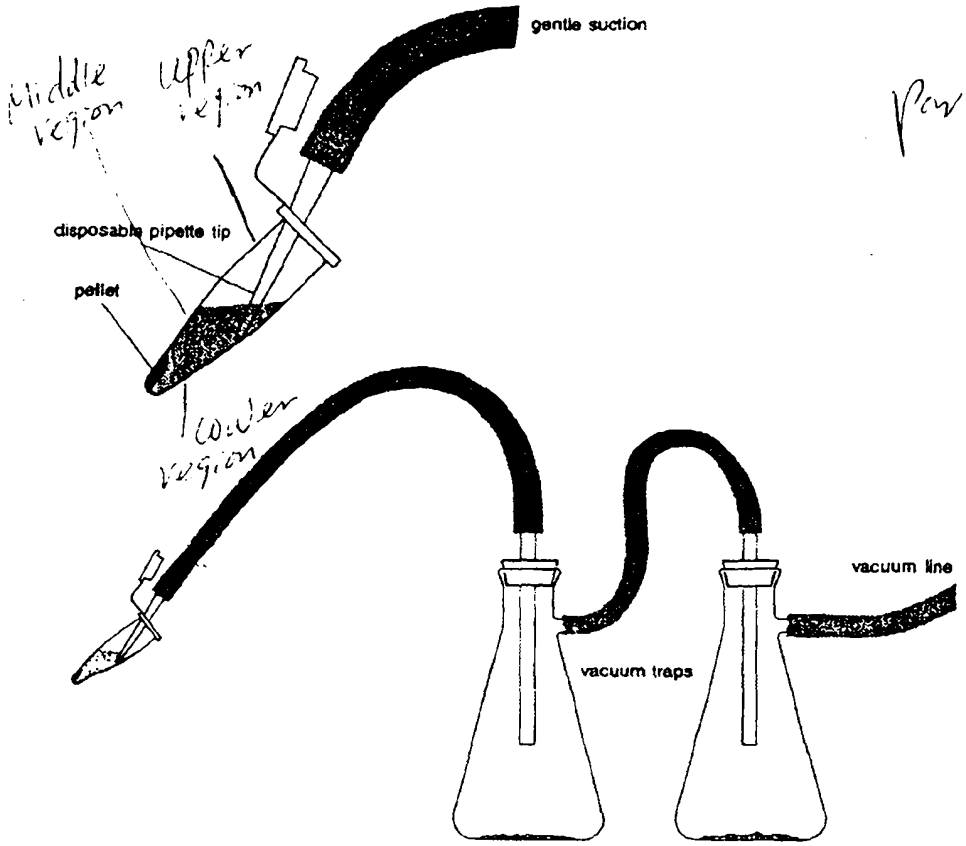

FIGURE 1.3
Aspiration of supernatants. Hold the open microfuge tube at an angle, with the pellet on the upper side. Use a disposable pipette tip attached to a vacuum line to withdraw fluid from the tube. Insert the tip just beneath the meniscus on the lower side of the tube. Move the tip towards the base of the tube as the fluid is withdrawn. Use gentle suction to avoid drawing the pellet into the pipette tip. Keep the end of the tip away from the pellet. Finally, vacuum the walls of the tube to remove any adherent drops of fluid.